

## SEQUENCE LISTING

### (1) GENERAL INFORMATION:

- (i) APPLICANT: Crabtree, Gerald R.  
Schreiber, Stuart L.  
Spencer, David M.  
Wandless, Thomas J.  
Belshaw, Peter
- (ii) TITLE OF INVENTION: REGULATED APOPTOSIS
- (iii) NUMBER OF SEQUENCES: 81
- (iv) CORRESPONDENCE ADDRESS:
  - (A) ADDRESSEE: FOLEY, HOAG & ELIOT LLP
  - (B) STREET: One Post Office Square
  - (C) CITY: Boston
  - (D) STATE: MA
  - (E) COUNTRY: USA
  - (F) ZIP: 02109-2170
- (v) COMPUTER READABLE FORM:
  - (A) MEDIUM TYPE: Floppy disk
  - (B) COMPUTER: IBM PC compatible
  - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
  - (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
- (vi) CURRENT APPLICATION DATA:
  - (A) APPLICATION NUMBER: 09/302,629
  - (B) FILING DATE: 30-April-1999
  - (C) CLASSIFICATION:
- (viii) ATTORNEY/AGENT INFORMATION:
  - (A) NAME: Matthew P. Vincent
  - (B) REGISTRATION NUMBER: 36,709
  - (C) REFERENCE/DOCKET NUMBER: APV-317.07
- (ix) TELECOMMUNICATION INFORMATION:
  - (A) TELEPHONE: 617-832-1000
  - (B) TELEFAX: 617-832-7000

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro Ser Gln Arg  
1 5 10

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GTAAAGTTAA C

11

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

TGACTCAGCG C

11

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc\_feature

(B) LOCATION: 6..11

(D) OTHER INFORMATION: /note= "Sac II restriction site."

(ix) FEATURE:

(A) NAME/KEY: misc\_signal

(B) LOCATION: 12..16

(D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 17..31

(ix) FEATURE:

(A) NAME/KEY: misc\_feature

(B) LOCATION: 17..33

(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

CGACACCGCG GCCACC ATG GCC ACA ATT GGA GC  
Met Ala Thr Ile Gly  
1 5

33

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Met Ala Thr Ile Gly  
1 5

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:  
 (A) NAME/KEY: misc feature  
 (B) LOCATION: 6..11  
 (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:  
 (A) NAME/KEY: misc feature  
 (B) LOCATION: 12..27  
 (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CGACACTCGA GAGCCCATGA CTTCTGG

27

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 4 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:  
 (A) NAME/KEY: Peptide  
 (B) LOCATION: 1..4  
 (D) OTHER INFORMATION: /note= "Translation product of complement of SEQ ID NO:6, bases 9 to 20."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Ser Trp Ala Leu  
1

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 6..11  
(D) OTHER INFORMATION: /note= "Xho I restriction site."

- (ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 12..41  
(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

- (ix) FEATURE:  
(A) NAME/KEY: CDS  
(B) LOCATION: 9..41

- (ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 28  
(D) OTHER INFORMATION: /note= "A to G."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

CGACACTC GAG CTC TGC TAC TTG CTA GGT GGA ATC CTC TTC  
Glu Leu Cys Tyr Leu Leu Gly Gly Ile Leu Phe  
1 5 10

41

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Glu Leu Cys Tyr Leu Leu Gly Gly Ile Leu Phe  
1 5 10

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 3..8
- (D) OTHER INFORMATION: /note= "Eco RI restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 9..24
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 24
- (D) OTHER INFORMATION: /note= "G to C."

(ix) FEATURE:

- (A) NAME/KEY: misc\_signal
- (B) LOCATION: complement (9..11)
- (D) OTHER INFORMATION: /note= "Translational stop encoded in complementary strand."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

GCGAATTCTT AGCGAGGGGC CAGC

24

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..4
- (D) OTHER INFORMATION: /note= "Translational product of complement to SEQ ID NO:10, bases 12 to 23."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Leu Ala Pro Arg

1

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 33 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 3..8  
 (D) OTHER INFORMATION: /note= "Eco RI restriction."

- (ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 12..17  
 (D) OTHER INFORMATION: /note= "Sal I restriction site."

- (ix) FEATURE:  
 (A) NAME/KEY: misc\_signal  
 (B) LOCATION: complement (9..11)  
 (D) OTHER INFORMATION: /note= "Translational stop signal  
 encoded on complementary strand."

- (ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 18..33  
 (D) OTHER INFORMATION: /note= "Region of homology with  
 target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

GCGAATTCTT AGTCGACGCG AGGGGCCAGG GTC

33

(2) INFORMATION FOR SEQ ID NO:13:

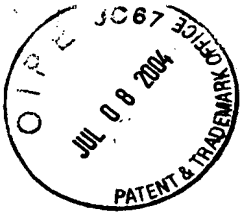
- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 4 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

- (ix) FEATURE:  
 (A) NAME/KEY: Peptide  
 (B) LOCATION: 1..4  
 (D) OTHER INFORMATION: /note= "Translational product of  
 complement to SEQ ID NO:12, bases 18 to 29."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Leu Ala Pro Arg



1

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 4..9  
(D) OTHER INFORMATION: /note= "Xho I restriction site."

- (ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 13  
(D) OTHER INFORMATION: /note= "T to G."

- (ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 4..25  
(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

- (ix) FEATURE:  
(A) NAME/KEY: CDS  
(B) LOCATION: 10..24

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GGGCTCGAG CTC GGC TAC TTG CTA G  
Leu Gly Tyr Leu Leu  
1 5

25

(2) INFORMATION FOR SEQ ID NO:15:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Leu Gly Tyr Leu Leu  
1 5

(2) INFORMATION FOR SEQ ID NO:16:



- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 26 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 6..11  
 (D) OTHER INFORMATION: /note= "Xho I restriction site."

- (ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 12..26  
 (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

CGACACTCGA GGTGACGGAC AAGGTC

26

(2) INFORMATION FOR SEQ ID NO:17:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 26 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 6..11  
 (D) OTHER INFORMATION: /note= "Sal I restriction site."

- (ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 12..26  
 (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

CGACAGTCGA CCAATCAGG GACCTC

26

(2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 33 base pairs  
 (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 10..15
- (D) OTHER INFORMATION: /note= "Bsi WI restriction site."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 6..32

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

TCGAG TAT CCG TAC GAC GTA CCA GAC TAC GCA G  
 Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
           1                                  5

33

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
           1                                  5

(2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..5

(D) OTHER INFORMATION: /note= "Sal I restriction site."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

TCGACTGCGT AGTCTGGTAC GTCGTACGGA TAC

33

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Sal I restriction site."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

TCGACTATCC GTACGACGTA CCAGACTACG CAC

33

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

TCGAGTTCGT AGTCTGGTAC GTCGTACGGA TAG

33

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 80 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Sac II restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc\_signal
- (B) LOCATION: 12..16
- (D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:

- (A) NAME/KEY: misc\_signal
- (B) LOCATION: 17..58
- (D) OTHER INFORMATION: /note= "Myristoylation signal."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 59..64
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 65..80
- (D) OTHER INFORMATION: /note= "Zeta homology."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 17..79

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

CGACACCGCG GCCACC ATG GGG AGT AGC AAG AGC AAG CCT AAG GAC CCC 45  
Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro  
1 5 10

AGC CAG CGC CTC GAG AGG AGT GCA GAG ACT G 80  
Ser Gln Arg Leu Glu Arg Ser Ala Glu Thr  
15 20

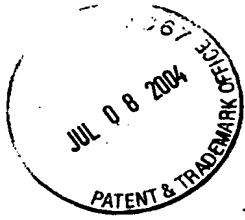
(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 21 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro Ser Gln Arg Leu Glu



1

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10

15

Arg Ser Ala Glu Thr  
20

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:  
(A) NAME/KEY: CDS  
(B) LOCATION: 12..26

- (ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 6..11  
(D) OTHER INFORMATION: /note= "Xho I restriction site."

- (ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 12..27  
(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

CGACACTCGA G GAG CTC TGT GAC GAT G  
Glu Leu Cys Asp Asp  
1 5

27

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Glu Leu Cys Asp Asp  
1 5

(2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid

(ii) MOLECULE TYPE: cDNA

(B) LOCATION: 6..11  
(D) OTHER INFORMATION: /note= "Xho I restriction site."

(B) LOCATION: 12..41  
(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(B) LOCATION: 27..29  
(D) OTHER INFORMATION: /note= "GAT to AAG."

(A) NAME/KEY: CDS  
 (B) LOCATION: 9..41

CGACACTC GAG CTC TGC TAC TTG CTA AAG GGA ATC CTC TTC  
Glu Leu Cys Tyr Leu Leu Lys Gly Ile Leu Phe  
1 5 10

41

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Glu Leu Cys Tyr Leu Leu Lys Gly Ile Leu Phe  
1 5 10

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 6..11  
 (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:  
 (A) NAME/KEY: CDS  
 (B) LOCATION: 9..44

(ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 27..44  
 (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

CGACACTC	GAG	CTG	CTG	GAT	CCG	AAG	CTC	TGC	TAC	TTG	CTA	AAG
Glu	Leu	Leu	Asp	Pro	Lys	Leu	Cys	Tyr	Leu	Leu	Lys	
1					5					10		

44

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 12 amino acids  
 (B) TYPE: amino acid  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Glu	Leu	Leu	Asp	Pro	Lys	Leu	Cys	Tyr	Leu	Leu	Lys
1				5					10		

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 31 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 6..11  
 (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 12..31

(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 9..31

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

CGACACTC GAG ACA ACA GAG TAC CAG GTA GC  
Glu Thr Thr Glu Tyr Gln Val Ala  
1 5

31

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Glu Thr Thr Glu Tyr Gln Val Ala  
1 5

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 12..28
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 9..28



(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

CGACACTC GAG GGC GTG CAG GTG GAG AC  
Glu Gly Val Gln Val Glu Thr  
1 5

28

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Glu Gly Val Gln Val Glu Thr  
1 5

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc\_feature  
(B) LOCATION: 6..11  
(D) OTHER INFORMATION: /note= "Sal I restriction site."

(ix) FEATURE:

(A) NAME/KEY: misc\_feature  
(B) LOCATION: 12..27  
(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

(A) NAME/KEY: CDS  
(B) LOCATION: complement (9..26)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

CGACAGTCGA CTTCCAGTTT TAGAAGC

27

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 6 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Leu Leu Lys Leu Glu Val  
 1 5

(2) INFORMATION FOR SEQ ID NO:37:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 7..12
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 10..27

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 13..27
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

TCGACACTC GAG ACG GGG GCC GAG GGC  
 Glu Thr Gly Ala Glu Gly  
 1 5

27

(2) INFORMATION FOR SEQ ID NO:38:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Glu Thr Gly Ala Glu Gly  
 1 5

(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:
  - (A) NAME/KEY: misc\_feature
  - (B) LOCATION: 7..12
  - (D) OTHER INFORMATION: /note= "Sal I restriction site."

- (ix) FEATURE:
  - (A) NAME/KEY: CDS
  - (B) LOCATION: complement (10..18)

- (ix) FEATURE:
  - (A) NAME/KEY: misc\_feature
  - (B) LOCATION: 13..28
  - (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

CCGACAGTCG ACCTCTATTT TGAGCAGC

28

(2) INFORMATION FOR SEQ ID NO:40:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 3 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Ile Glu Val

1

(2) INFORMATION FOR SEQ ID NO:41:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 38 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

CGACACCGCG GCCACCATGA AGCTACTGTC TTCTATCG

38

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

CGACAGTCGA CCGATACAGT CAACTGTC

28

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc\_feature  
(B) LOCATION: 6..11  
(D) OTHER INFORMATION: /note= "Sac II restriction site."

(ix) FEATURE:

(A) NAME/KEY: misc\_signal  
(B) LOCATION: 12..16  
(D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:

(A) NAME/KEY: CDS  
(B) LOCATION: 17..37

(ix) FEATURE:

(A) NAME/KEY: misc\_feature  
(B) LOCATION: 17..38  
(D) OTHER INFORMATION: /note= "Gal4 (1-147) coding region."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

CGACACCGCG GCCACC ATG AAG CTA CTG TCT TCT ATC G  
Met Lys Leu Leu Ser Ser Ile  
1 5

38

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Met Lys Leu Leu Ser Ser Ile  
1 5

(2) INFORMATION FOR SEQ ID NO:45:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: double
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..17
- (D) OTHER INFORMATION: /note= "Region encoding for C-terminal end of Gal4 (1-147)."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 3..17

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 18..23
- (D) OTHER INFORMATION: /note= "Sal I restriction site."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

GA CAG TTG ACT GTA TCG GTCGACTGTC G  
Arg Gln Leu Thr Val Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:46:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Arg Gln Leu Thr Val Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

CGACACCGCG GCCACCATGG TTTCTAAGCT GAGC

34

(2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

CGACAGTCGA CCAACTTGTG CCGGAAGG

28

(2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc\_feature  
(B) LOCATION: 6..11  
(D) OTHER INFORMATION: /note= "Sac II restriction site."

(ix) FEATURE:

(A) NAME/KEY: misc\_signal  
(B) LOCATION: 12..16

(D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 17..34

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 17..34
- (D) OTHER INFORMATION: /note= "Region encoding N-terminal end of HNF1 (1281)."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

CGACACCGCG GCCACC ATG GTT TCT AAG CTG AGC  
Met Val Ser Lys Leu Ser  
1 5

34

(2) INFORMATION FOR SEQ ID NO:50:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Met Val Ser Lys Leu Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:51:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: double
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /note= "Region encoding for C-terminal end of HNF1 (1-282)."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 3..17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

CC TTC CGG CAC AAG TTG GTCGACTGTC G  
Ala Phe Arg His Lys Leu  
1 5

28

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ala Phe Arg His Lys Leu  
1 5

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: both  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:  
(A) NAME/KEY: misc\_signal  
(B) LOCATION: 3..7  
(D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:  
(A) NAME/KEY: misc\_feature  
(B) LOCATION: 1..11  
(D) OTHER INFORMATION: /note= "Complementary to bases 5 to 15 of SEQ ID NO:54."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

GGCCACCATG C

11

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 3 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear



(ix) FEATURE:  
 (A) NAME/KEY: Peptide  
 (B) LOCATION: 1..3  
 (D) OTHER INFORMATION: /note= "Translation product of SEQ  
 ID NO:53 and SEQ ID NO:55. Translational start  
 site at base 8 of SEQ ID NO:53."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Met Leu Glu  
1

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 17 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: both  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 14..17  
 (D) OTHER INFORMATION: /note= "Sac II restriction site  
 overhang."

(ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 1..5  
 (D) OTHER INFORMATION: /note= "Xho I restriction site  
 overhang."

(ix) FEATURE:  
 (A) NAME/KEY: misc\_feature  
 (B) LOCATION: 5..15  
 (D) OTHER INFORMATION: /note= "Complementary to bases 1 to  
 11 of SEQ ID NO:53."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

TCGAGCATGG TGGCCGC

17

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 27 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

TCGACCCTAA GAMGAAGAGA AAGGTAC

27

(2) INFORMATION FOR SEQ ID NO:57:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

TCGAGTACCT TTCTCTTCKT CTTAGGG

27

(2) INFORMATION FOR SEQ ID NO:58:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: both
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Sal I restriction site overhang."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 5..27
- (D) OTHER INFORMATION: /note= "Complementary to SEQ ID NO:60, bases 5 to 27."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

TCGACCCTAA GAAGAAGAGA AAGGTAC

27

(2) INFORMATION FOR SEQ ID NO:59:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..11
- (D) OTHER INFORMATION: /note= "Translation product of SEQ ID NOS:58 and 60."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Leu Asp Pro Lys Lys Lys Arg Lys Val Leu Glu  
1                      5                      10

(2) INFORMATION FOR SEQ ID NO:60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Xho I restriction site overhang."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 5..27
- (D) OTHER INFORMATION: /note= "Complementary to SEQ ID NO:58, bases 5 to 27."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

TCGAGTACCT TTCTCTTCTT CTTAGGG

27

(2) INFORMATION FOR SEQ ID NO:61:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

CGACAGTCGA CGCCCCCCCCG ACCGATGTC

29

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 26 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

CGACACTCGA GCCCACCGTA CTCGTC

26

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 29 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Sal I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 12..29

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 12..29
- (D) OTHER INFORMATION: /note= "Region encoding N-terminal end of VP16 (413-490)."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

CGACAGTCGA C GCC CCC CCG ACC GAT GTC  
Ala Pro Pro Thr Asp Val  
1 5

29

(2) INFORMATION FOR SEQ ID NO:64:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids

(B) TYPE: amino acid  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Ala Pro Pro Thr Asp Val  
1 5

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:  
(A) NAME/KEY: CDS  
(B) LOCATION: 1..15

(ix) FEATURE:  
(A) NAME/KEY: misc feature  
(B) LOCATION: 1..15  
(D) OTHER INFORMATION: /note= "Region encoding C-terminal  
end of VP16 (413-490)."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

GAC GAG TAC GGT GGG CTCGAGTGTC G  
Asp Glu Tyr Gly Gly  
1 5

26

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Asp Glu Tyr Gly Gly  
1 5

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

GGAATTCCAT ATGGGCGTGC AGG

23

(2) INFORMATION FOR SEQ ID NO:68:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 5 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

His Met Gly Val Gln  
 1 5

(2) INFORMATION FOR SEQ ID NO:69:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 39 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

CTGTCCCGGG ANNNNNNNNN TTTCTTTCCA TCTTCAAGC

39

(2) INFORMATION FOR SEQ ID NO:70:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Arg Ser Xaa Xaa Xaa Lys Lys Gly Asp Glu Leu  
 1 5 10

(2) INFORMATION FOR SEQ ID NO:71:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 63 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

CTGTCCCGGG AGGAATCAAA TTTCTTTCCA TCTTCAAGCA NNNNNNNNNG TGCACCACGC 60  
AGG

(2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Arg Ser Ser Asp Phe Lys Lys Gly Asp Glu Leu Met Xaa Xaa Xaa His  
1                      5                      10                      15  
Val Val Cys

(2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 57 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

CGCGGATCCT CATTCCAGTT TTAGAAGCTC CACATCNNNN NNNNNAGTGG CATGTGG 57

(2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Glu Leu Lys Leu Leu Glu Val Asp Xaa Xaa Xaa Thr Ala His Pro  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:75:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

CGCGGATCCT CATTCCAGTT TTAGAAGC

28

(2) INFORMATION FOR SEQ ID NO:76:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 5 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Glu Leu Lys Leu Leu  
1 5

(2) INFORMATION FOR SEQ ID NO:77:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

CGACAGTCGA CCGATACAGT CAACTGTC

28

(2) INFORMATION FOR SEQ ID NO:78:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single



(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

CGACAGTCGA CCAACTTGTG CCGGAAGG

28

(2) INFORMATION FOR SEQ ID NO:79:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

TCGAGCATGG TGGCCGC

17

(2) INFORMATION FOR SEQ ID NO:80:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

TCGAGTACCT TTCTCTTCTT CTTAGGG

27

(2) INFORMATION FOR SEQ ID NO:81:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 26 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

CGACACTCGA GCCCACCGTA CTCGTC

26